Economics Center
for education & research

The Economic Benefit of Ohio Lottery Internet Sales

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Executive Summary

The Economics Center has analyzed the potential for increasing Ohio Lottery revenue by giving its citizens the option of purchasing tickets on the Internet. This research is intended to assist policy-makers in making decisions about the Ohio Lottery.

- The Economics Center estimates the net increase in Ohio Lottery ticket sales that would result from allowing Internet purchases at $1,176,000,000 over the next five years.
- This increase in sales will produce an additional $376 million in funding for education through Ohio Lottery profits during the same period.
- Net new Ohio Lottery Internet sales are expected to grow by about 10.6 percent annually, from $190 million in the first year to $284 million in the fifth year.

Projected Ohio Lottery Ticket Sales

Year	Ticket Sales (in $millions)		
	Base	Net New (Internet)	Total
1	$2,148	$190	$2,338
2	$2,219	$210	$2,430
3	$2,299	$233	$2,533
4	$2,382	$258	$2,640
5	$2,468	$284	$2,753

- Of this total, 58% will come from increased play by existing lottery players, and 42% will come from ticket purchases by new or returning players.
- This analysis assumes that no changes in Ohio Lottery marketing will occur. Changes, such as increased incentives to retailers, combined with opportunities for retailers to create Internet "storefronts" and the ability to do point-of-sale marketing, would be likely to produce higher sales.

The adoption of an Internet option for selling Ohio Lottery tickets will also produce an economic benefit for the economy and residents of the State through increased economic activity.

- Evidence from several other states indicates that an Internet option for the Ohio Lottery is going to have a net positive economic impact on the State of Ohio as a result of recapturing out-of-state spending by Ohio residents.
- The amount of money recaptured by the Internet lottery option from out-of-state gambling in the first full year would amount to about $55.6 million.
- Recaptured spending on related items, such as food and shopping, would produce an additional $11.9 million.
- Combined, this $67.5 million in spending in Ohio, along with the further economic activity it will generate, represents a net new benefit for Ohio.

Introduction

The Ohio Lottery generates funds for the support of elementary, secondary, vocational, and special education programs in the State of Ohio. The 2002 Final Report of the Committee to Study the Impact of Gambling in Ohio included an observation that selling Ohio Lottery products over the Internet had the potential to increase lottery ticket sales. Such an increase would lead to larger Ohio Lottery revenues, which would, in turn, benefit schools and students.

The Internet is a technological tool that has been adopted by American consumers with remarkable rapidity. It makes a wide range of goods and services more accessible and convenient for many people.

The Economics Center for Education & Research has analyzed a wide range of available research in order to determine the potential for increased Ohio Lottery revenue. Specifically, the Economics Center has developed:

1. An analysis of recent Ohio Lottery performance,
2. Assumptions regarding future Ohio Lottery projections,
3. Assumptions regarding net new sales from an Internet option, and
4. An estimate of anticipated net new sales and revenues.

In addition, drawing on secondary data sources, the Economics Center has prepared:

1. A description of the extent to which other gaming activity (e.g., casinos) is likely to be affected by the availability of an Internet lottery (economic substitution effects), and
2. A description of the size of various economic impacts, based on an analysis of substitution and recaptured household spending.

Analysis of Ohio Lottery Performance in 2002 and 2003

Ohio Lottery ticket sales totaled $2,078,300,000 in 2003, a 4.8 percent increase over its 2002 total of $1,983,100,000. This marked the second consecutive year of increased ticket sales, after a five-year period of stable or declining sales.

According to estimates prepared by the U.S. Census Bureau, Ohio had a population of about 11,408,700 in 2002 and approximately 11,435,800 in 2003. Based on these statistics, along with adult population figures from the 2000 Census and 2005 projections prepared last year by the Ohio Department of Development, it is possible to estimate the state's adult population.

Ohio's adult population in 2002 is estimated at 8,520,313 and the estimate for 2003 is 8,548,055. These figures provide a basis for estimating the total number of lottery players and the average ticket sales per player.

Recent Ohio Lottery Performance

	2002	2003
Ohio Lottery Ticket Sales	$1,983,100,000	$2,078,300,000
Ohio Population		
Total	11,408,699	11,435,798
Adult	8,520,213	8,548,055
Lottery Players		
Percent	77%	77%
Number	6,560,564	6,582,002
Average Ticket Sales	$302.28	$315.75

According to GTECH's 2000 national survey, 72 percent of respondents reported playing the lottery at least once during the previous year. This figure underestimates the proportion of lottery players in Ohio because it includes those states that do not have lotteries. Since 72 percent of the total U.S. population amounts to 82 percent of the population living in jurisdictions with lotteries, the proportion of lottery players in Ohio may be as high as 82 percent. The Economics Center uses the mid-point between these two figures because some people from non-lottery states cross state lines to buy tickets, thus lowering the national participation rate. This mid-point (77%) is considered a conservative, yet realistic, estimate.

To determine the number of Ohio residents who play the lottery, this figure is applied to the estimated total adult population of the state. Multiplying each of these estimates by 77percent produces estimates of 6,560,564 lottery players in 2002 and 6,582,002 lottery players in 2003.

To determine average ticket sales per player, total Ohio Lottery sales are divided by the number of lottery players. Average ticket sales per player were $302.28 in 2002, and $315.75 in 2003.

Assumptions Regarding Future Ohio Lottery Performance

Future Ohio Lottery performance is estimated on the basis of assumptions about population, lottery participation, and average ticket sales per player.

State population growth projections, both total and adult, are based on U.S. Census Bureau estimates and on projections by the Ohio Department of Development and the Census Bureau. Ohio's total population is projected to increase by about 0.29 percent annually from 2003 to 2008, while the state's adult population is projected to increase by, on average, 0.49 percent annually over the same period. As a result, the projections for 2008 are a total population of 11,600,298 and an adult population of 8,757,934.

No evidence was found to suggest either an increase or a decrease in lottery participation. Accordingly, the participation rate is held constant at 77 percent, which means that the number of players will increase from 6,582,002 in 2003 to 6,743,609 in 2008, an overall growth of about 2.5 percent.

Based on Ohio's recent experience of growing ticket sales, and longer-term per capita lottery sales growth elsewhere, average ticket sales per player are projected to increase at a rate of 3 percent per year. This assumption produces an overall increase of 15.9 percent, from $315.75 in 2003 to $366.05 in 2008.

Projected Ohio Lottery Performance

	2004	2005	2006	2007	2008
Population					
Total	11,468,442	11,501,180	11,534,125	11,567,164	11,600,298
Adult	8,575,988	8,604,012	8,655,016	8,706,323	8,757,934
Lottery Players					
Percent	77%	77%	77%	77%	77%
Number	6,603,511	6,625,089	6,664,362	6,703,869	6,743,609
Average Ticket Sales	$325.23	$334.99	$345.04	$355.39	$366.05
Ohio Lottery Ticket Sales ($ millions)	$2,147.7	$2,219.3	$2,299.5	$2,382.5	$2,468.5

When these assumptions are combined, it is possible to project Ohio Lottery performance for the five-year period of 2004 through 2008, as shown in the table above. The resulting projections (from $2,147.7 million in 2004 through $2,468.5 million in 2008) are the base figures for Ohio Lottery ticket sales, absent any changes such as the proposal to permit Internet participation.

Assumptions Regarding Net New Sales from an Internet Option

The fundamental element in estimating net new Ohio Lottery ticket sales is the recognition that these sales will come from two distinct market segments, which require different estimation approaches and assumptions. The two groups are: existing lottery players who can be expected to increase their spending on the Ohio Lottery, and additional new players.

Existing Players As presented in the previous section, Ohio has an estimated 6.6 million lottery players. To determine the extent to which this market segment will generate net new sales as a result of being able to play the lottery on the Internet, three factors must be employed: a measure of Internet use, a measure of market penetration (lottery purchase), and a measure of spending.

Adult Internet use is based on the most recent figures reported by the Harris Poll, which has been tracking Internet use since 1995. According to Harris, adult Internet use had reached 69 percent by the end of 2003, with increases averaging one to two percentage points annually in recent years.

Of those players who use the Internet, an estimated 15 percent are expected to purchase additional lottery tickets if there were an Internet option. This figure is derived from a variety of sources. First, industry research indicates that some players (perhaps as many as 10%) would increase their participation if the purchase of tickets were more convenient or if they were reminded, factors that an Internet option can readily address. Second, the proportion of the population who "often" or "very often" playing or downloading games the Internet, including those who have paid subscriptions, is growing rapidly (18% at the end of 2003). Third, adults are using the Internet with increasing frequency and in increasing proportion to purchase goods and services.

Additional monthly purchases by these existing players are assumed to average $13 per month. This assumption is also derived from several notions. First, since these people are already playing the lottery, it is not appropriate to use the overall per-player average. Generally speaking, their use will only be increased moderately, not tremendously, although the increase may be substantial for some players. Second, some of these players can be expected to spend less money on other forms of gambling because an Internet lottery option will be perceived as relatively more attractive, so in increase will be more than just a negligible amount.

Internet-Generated Sales from Existing Players in 2004	
Existing Players	6,603,511
Adult Internet Use	69%
Players Who Use the Internet	4,556,423
Will Buy Additional Lottery Tickets on the Internet	15%
Would Play on the Internet	683,463
Additional Monthly Purchases	$13.00
NEW ANNUAL LOTTERY TICKET SALES	$106,620,289

Combining these assumptions, as shown in the table above, the total net new lottery sales from existing players in 2004 (the nominal first 12 months with an Internet lottery option) would come to an estimated $106,620,289.

New Players An Internet lottery option can also be expected to attract a large number of new lottery players. To determine the extent to which this market segment will generate net new sales as a result of being attracted to the lottery because of the Internet option, the same three factors considered in the previous discussion must be employed.

Adult Internet use is estimated at 69 percent, based, once again, on the most recent figures reported by the Harris Poll.

Of those players who use the Internet, an estimated 30 percent are expected to become lottery players if there were an Internet option. This figure is based on several considerations. First, industry research indicates that some former players would return to the lottery if the purchase of tickets were more convenient and entertaining or appealing, factors that an Internet option can address. Second, these same considerations are also likely to attract other new players. Third, as noted above, use of the Internet for gaming and making purchases is growing. Finally, a 30 percent capture rate is not excessive, since it would only increase overall lottery participation by less than 5 percentage points.

Monthly purchases by these new players are assumed to average $17 per month. It is not expected that new players will play at the per-player level of existing players, but it is reasonable to expect them to spend slightly more, on average, than the additional purchase amount expected for existing players.

Internet-Generated Sales from New Players in 2004	
Non-Playing Adults	1,972,477
Adult Internet Use	69%
Non-Players Who Use The Internet	1,361,009
Will Buy Lottery Tickets on the Internet	30%
New Internet Players	408,303
Monthly Purchases	$17
NEW ANNUAL LOTTERY TICKET SALES	$83,293,759

Combining these assumptions, as shown in the table above, the total net new lottery sales from new players in 2004 (the nominal first 12 months with an Internet lottery option) would come to an estimated $83,293,759.

Estimate Of Anticipated Net New Sales And Revenues

Taken together, these two market segments are projected to produce a net total of $189,914,047 in new Ohio Lottery ticket sales in the first 12 months of operation.

In future years, substantial growth will occur in this net new sales figure. Besides population growth, factors contributing to this growth, as shown in the following table, include:

- increased use of the Internet (one percentage point per year);
- an increased proportion of each segment playing on the Internet (one percentage point per year); and
- a gradual increase in average spending, due, in part, to inflation (3.5% annually).

Assumptions for Future Sales Growth					
	2004	2005	2006	2007	2008
Adult Internet Use	69%	70%	71%	72%	73%
Market Penetration					
Existing: Buy More on the Internet	15%	16%	17%	18%	19%
New: Buy on the Internet	30%	31%	32%	33%	34%
Average Spending					
Existing: Additional Monthly Purchases	$13.00	$13.46	$13.93	$14.41	$14.92
New: Monthly Purchases	$17.00	$17.60	$18.21	$18.85	$19.51

The following table shows that the net new Ohio Lottery sales over this five-year period is projected to total more than $1.176 billion.

Net New Ohio Lottery Sales			
	Existing Players	New Players	Total
2004	$106,620,289	$83,293,759	$189,914,047
2005	$119,804,929	$90,669,067	$210,473,997
2006	$134,422,246	$98,835,958	$233,258,204
2007	$150,271,343	$107,611,876	$257,883,219
2008	$167,438,313	$117,036,921	$284,475,234
Total	$678,557,120	$497,447,580	$1,176,004,700

The table below combines these new sales with the standard ticket sales based on the present lottery arrangement. It shows that the projected Ohio Lottery performance, with an Internet option, offers a significant increase over the status quo.

Projected Ohio Lottery Performance, with an Internet Option				
	Standard Ticket Sales	Net New Internet Sales	TOTAL	Increase
2004	$2,147,659,804	$189,914,047	$2,337,573,852	8.8%
2005	$2,219,338,645	$210,473,997	$2,429,812,641	9.5%
2006	$2,299,471,575	$233,258,204	$2,532,729,779	10.1%
2007	$2,382,487,901	$257,883,219	$2,640,371,120	10.8%
2008	$2,468,498,140	$284,475,234	$2,752,973,374	11.5%
Total	$11,517,456,065	$1,176,004,700	$12,693,460,765	10.2%

Over the past four years, the Ohio Lottery has paid an average of 32 percent of its gross ticket sales revenues into the Lottery Profits Education Fund. Using this figure, the net new sales of $1.176 billion projected as a result of selling Ohio Lottery products over the Internet would generate an additional $376,321,504 in funding for Ohio schools and students.

This analysis assumes that no changes in Ohio Lottery marketing will occur. Changes, such as increased incentives to retailers, combined with opportunities for retailers to create Internet "storefronts" and the ability to do point-of-sale marketing (on new games and the educational funding generated by Ohio Lottery proceeds), would be likely to produce higher sales.

Potential for Increased Substitution of the Lottery for Out-of-State Gambling

While Ohio does not have any casinos within its borders, surrounding states do have casinos that are sufficiently close to Ohio's borders that Ohio residents are willing to frequent them. These include casinos in Indiana and Michigan, along with casino-style video lottery terminals at West Virginia's racetracks. New York State and Ontario also have casinos that attract Ohio residents. Money spent in these establishments represents what is referred to here as economic "leakage," an export of money as a result of this economic activity.

The question is now whether an Internet option as part of the Ohio Lottery would allow the State of Ohio to retain some of that leakage, to the benefit of the Ohio economy. For this to occur, however, consumers must consider Internet lottery a substitute for casino gambling. There is statistical support for the notion that lottery and casino gambling are economic substitutes. Therefore, it is important to consider the extent to which other gaming activity is likely to be affected by the availability of an Internet option in the Ohio Lottery.

A 1998 study of the economic impacts of gaming in Missouri identified some of the substitutes for in-state casino gambling. For example, 38 percent of respondents indicated they would have gone to an out-of-state casino if casinos had not been available in Missouri. The following table lists a number of other substitutes for casino gambling that were identified in the study including sporting events, going to the movies, attending theatre or concerts, bingo, eating out and additional vacationing. Hence, the substitutes point to a broad "entertainment" category, to which casino gambling belongs.

Selected Substitutes for In-State Casino Gambling	
If gaming were not available in Missouri, would you have more often:	
Gone to an out-of-state casino?	38%
Attended a major sporting event?	3%
Gone to the movies?	6%
Gone to the theatre or a concert?	4%
Played bingo?	8%
Eaten at a restaurant?	6%
Participated in a sporting event?	3%
Gone to a dog or horse track?	15%
Taken more vacation?	8%

A survey of adults in Minnesota shows that many consumers of lottery are also consumers of casino gambling. The study found that, within the prior twelve months, 68 percent of those who had engaged in casino gambling also played the lottery. However, this number by itself might be misleading. The study does not specify whether consumers view the lottery as a substitute for casino gambling per se, but only that they engage in both. There are two ways to view this: either they do indeed view the lottery as a substitute, or they see the two activities as completely different, which yield different types of enjoyment that are not readily substituted. That is, the two activities are sufficiently unique, relative to each other, that playing more of one does not satisfy the desire to play the other.

While the Minnesota study doesn't answer this question, it does illustrate that there are people who spend money both at casinos and on the lottery. The question is resolved, however, by another element from the Missouri study, which specifically indicates that, had Missouri casinos not been available to respondents, 24 percent of them would have purchased more lottery tickets.

Lottery as a Substitute for Casino Gambling	
If casino gaming were not available, would you have spent more money on the lottery?	24%

Additionally, data on the Michigan Lottery offer evidence that consumers of casino gambling view playing the lottery as a substitute. From 1993 to 1999, lottery ticket sales increased an average of 5.7 percent per year, with slower growth occurring in conjunction with the opening of the Windsor Casino. Then, when casinos were introduced in Detroit, lottery sales were flat to slightly declining. Since lottery sales are not significantly affected by broader economic cycles, it is reasonable to conclude that Michigan lottery players began spending money on casino gambling, money that would otherwise have been spent on the lottery. This represents an observable substitution effect.

Thus, there is potential to retain some of the economic activity associated with casino gambling because consumers view the lottery as a substitute for that activity. This is important because the central issue is whether an Internet option for the Ohio Lottery is going to have a net positive economic impact on the State of Ohio. If it were the case that the lottery were not a substitute for casino gambling, then any new money spent by Ohio consumers on the lottery would represent a redistribution of economic activity within Ohio (more money to the lottery and education, less to movie producers or sports teams or restaurants) because Ohioans would be consuming more lottery at the expense of other Ohio activities.

Estimates of the Potential for Recaptured Spending

Recaptured Spending from Gaming The estimated adult population of Ohio is approximately 8,576,000 in 2004. According to Simmons Market Research Bureau's most recent national survey research, 22.5 percent of Ohio adults report gambling in casinos during the preceding twelve months. Combining these figures produces an estimate of 1.93 million casino players in Ohio. Since the above-mentioned Missouri study indicates that 24 percent of casino gamblers view the lottery as a substitute, this means that at least a portion of the money spent in casinos by about 463,000 Ohioans could be recaptured by offering a more attractive Ohio Lottery product.

Based on several recent studies, the Economics Center estimates that the average Ohio gambler spends $360 per year on casino gambling. The assumption employed in this analysis is that one third of the exported casino gambling money, or $120 per gambler, would be recaptured by substitute spending on the Ohio Lottery's Internet option.[1] This means that the amount of money recaptured by the Internet lottery option from out-of-state gambling in the first full year would amount to about $55.6 million.

Recaptured Spending from Other Categories When Ohio consumers visit the out-of-state casinos, they also spend money on additional items, such as food and shopping. Based on research reported about visitors to Mississippi casinos, this amount is estimated at $86 per person. Of this total, 30 percent ($25.80 per person) is assumed to be recaptured as a result of the substitution playing the lottery in place of casino gambling. This amounts to an additional $11.9 million in recaptured spending.

Total Recaptured Leakage and Impact Combined, the recaptured leakage of these two types of spending would produce net positive economic gain of $67.5 million for the State of Ohio, on an annual basis.

Potential for Recaptured Spending in 2004		
Ohio Adult Population	8,576,000	
Casino Use	22.5%	
Casino Gamblers	1,930,000	
Lottery Substitution	24%	
Persons Recaptured by Internet Option	463,000	
Amount Recaptured per Person	$ 120.00	
Recaptured Spending From Gaming		**$ 55,560,000**
Persons Recaptured by Internet Option	463,000	
Amount Recaptured per Person	$ 25.80	
Recaptured Spending From Other Categories		**$ 11,945,400**
TOTAL RECAPTURED LEAKAGE		**$ 67,505,400**

Since the $67.5 million represents new economic activity in Ohio, it does indeed constitute a net new benefit. Since this spending will generate further economic activity, once it is retained and spent in Ohio, the total economic impact will naturally be higher than $67.5 million. While the determination of an exact multiplier for this impact is beyond the scope of this study, it is reasonable to estimate that it will approach 2.0.

Thus, the adoption of an Internet option for the Ohio Lottery would not only benefit schools and students through the Lottery Profits Education Fund, but it would also benefit the economy and residents of the State through this increased economic activity.

[1] The 463,000 persons who shift part of their spending from casinos to the lottery constitute 42 percent of the people who are providing net new lottery sales due to an Internet option. Their recaptured spending of $120 a year constitutes about two thirds of their average net new monthly lottery spending of $13 to $17 a month.